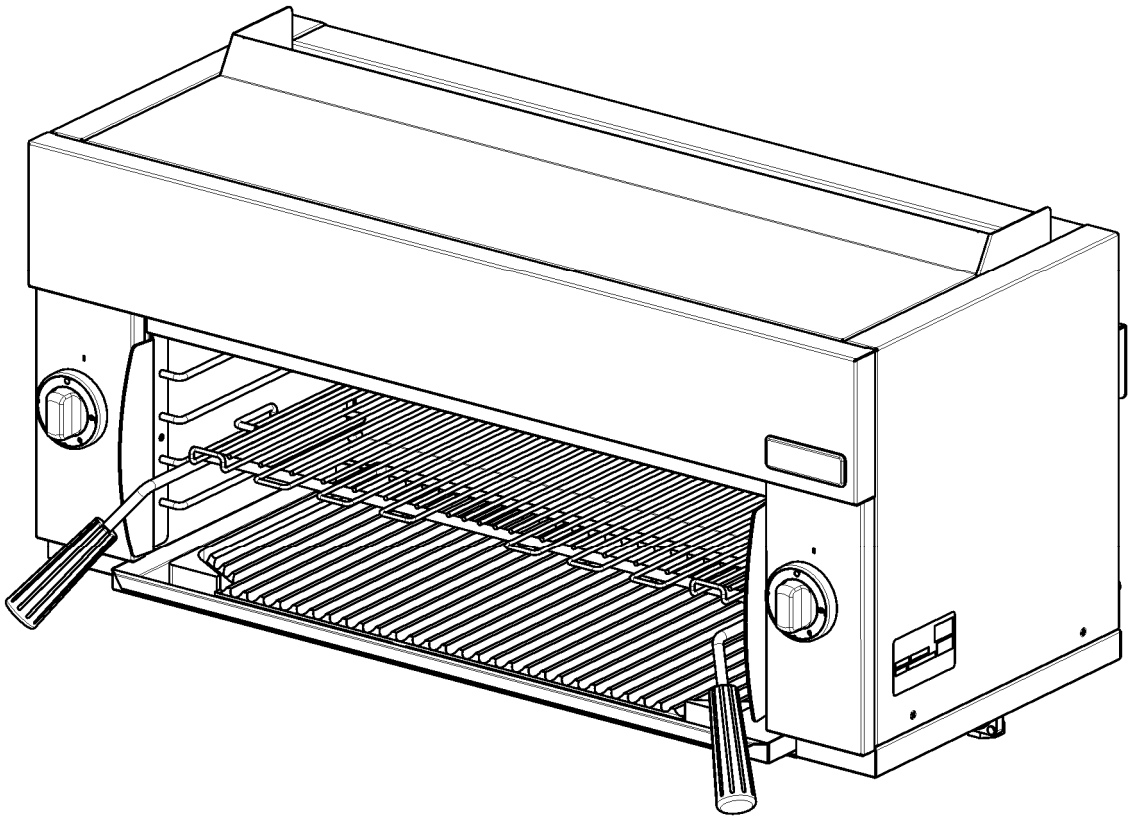
Gas Salamander

Model CS9

Service Manual



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WARNING:

ALL INSTALLATION AND SERVICE REPAIR WORK MUST BE CARRIED OUT BY QUALIFIED PERSONS ONLY.

IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH. READ THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS APPLIANCE.

IMPORTANT: **MAKING ALTERATIONS MAY VOID WARRANTIES AND APPROVALS.**

This manual is designed to take a more in depth look at the CS9 Salamanders for the purpose of making the units more understandable to service people.

There are settings explained in this manual that should never require to be adjusted, but for completeness and those special cases where these settings are required to change, this manual gives a full explanation as to how, and what effects will result.

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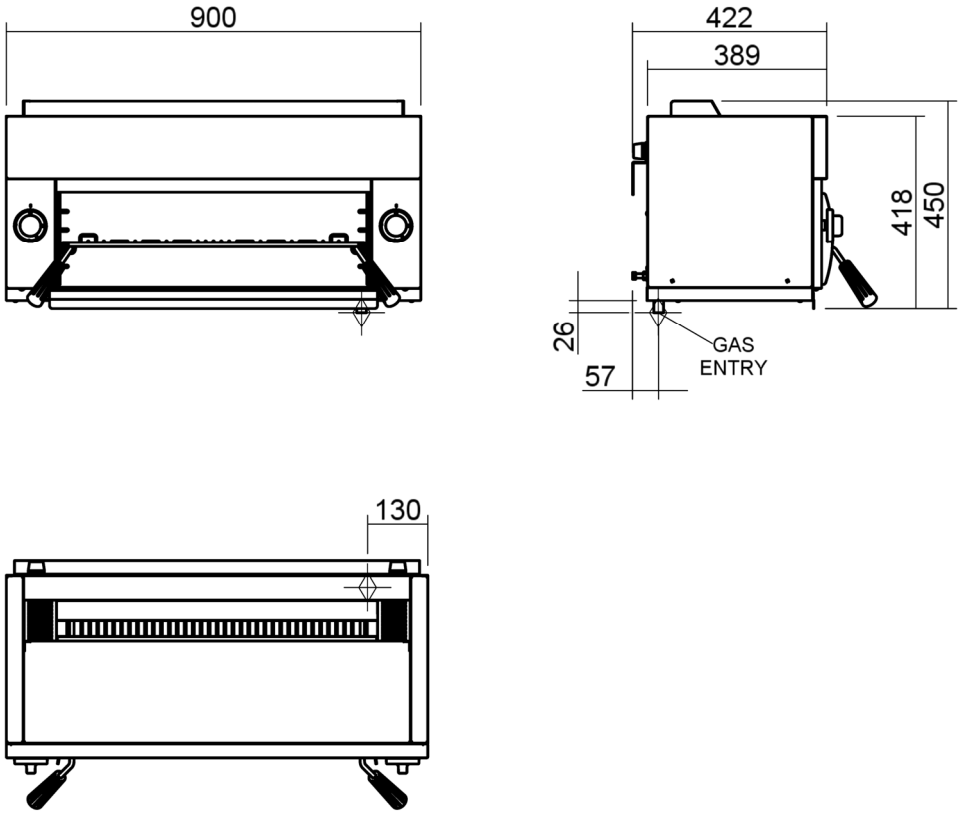
Model Numbers Covered in this Specification

CS9 Cobra Gas Salamander

External Dimensions



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1 Specifications

Gas Supply (Non-UK models)

	Natural Gas	LPG / Butane	Town Gas
Input Rating (N.H.G.C.)	31.5 MJ/hr (29,850 BTU)	31.5 MJ/hr (29,850 BTU)	40.0 MJ/hr (41,700 BTU)
Supply Pressure	1.13 - 3.40 kPa (4.5" - 13.5 w.c.)	2.75 - 4.50 kPa (11" - 18" w.c.)	0.76 - 1.50 kPa (3" - 6" w.c.)
Operating Pressure	1.0 kPa (*) (4.0" w.c.)	2.55 kPa (*) (10.0" w.c.)	0.63 kPa (*) (2.5" w.c.)
Gas Connection	$^1/_2$" BSP Male		

Gas Supply (UK models)

	Natural (G20)	Propane (G31)
Heat Input (Gross)	8.8 kW	8.8 kW
Gas Rate	0.84 m^3/hr	0.63 kg/hr
Supply Pressure	20 mbar	37 mbar
Operating Pressure	10 mbar	26 mbar
Gas Connection	$^1/_2$" BSP Male	

Injector Sizes

	Natural Gas	LPG	Butane	Town Gas
Main Burner	1.85mm	1.15mm	1.10mm	3.50mm
Low Fire Screw	1.00mm	1.00mm	1.00mm	2.50mm

Salamander Internal Dimensions

	Width	Depth	Height
CS9 Salamander	685mm	330mm	230mm (at front)

Cooking Area

Rack Size	610mm x 310mm
Branding Plate (accessory)	610mm x 310mm

Weight (Net)

CS9 Salamander	42 kg

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Installation Requirements

NOTE: It is most important that this salamander is installed correctly and that operation is correct before use. Installation shall comply with local electrical, gas, health and safety requirements.

Cobra Salamanders are designed to provide years of satisfactory service, and correct installation is essential to achieve the best performance, efficiency and trouble-free operation.
This appliance must be installed in accordance with National installation codes and in addition, in accordance with relevant National / Local codes covering gas and fire safety.

AUSTRALIA:	- AS5601	- Gas Installations.
NEW ZEALAND:	- NZS5261	- Gas Installation.
UNITED KINGDOM:	- Gas Safety (Installation & Use) Regulations 1998.	
	- BS6173	- Installation of Catering Appliances.
	- BS5440	- 1 & 2 Installation Flueing & Ventilation.
IRELAND:	- IS 820	- Non - Domestic Gas Installations.

Installations must be carried out by qualified service persons only. Failure to install equipment to the relevant codes and manufacturer's specifications shown in this section will void the warranty.
Components having adjustments protected (e.g. paint sealed) by the manufacturer are only allowed to be adjusted by an qualified service person. They are not to be adjusted by the installation person.

Unpacking

- Remove all packaging and transit protection from the appliance including all protective plastic coating from the exterior stainless steel panels.
- Check equipment and parts for damage. Report any damage immediately to the carrier and distributor.

1 x Salamander Rack.

1 x Trough Tray.

1 x Gas Regulator.

1 x Gas Conversion Kit.

1 x Wall Mounting Bracket, including;

- 2 x 25mm Black Plastic Spacers.
- 2 x $^{3}/_{8}$" Bolts / Nuts.

- Report any deficiencies to the distributor who supplied the appliance.
- Check that the available gas supply is correct to that shown on the rating plate located on the front bottom corner of the right hand side panel.
- Check that the following parts have been supplied with the appliance:

Location

1. Installation must allow for a sufficient flow of fresh air for the combustion air supply.

Combustion Air Requirements

Natural Gas	**9 m³/hr minimum.**
LPG / Propane	**9 m³/hr minimum.**
Butane	**9 m³/hr minimum.**
Town Gas	**9 m³/hr minimum.**

2. Installation must include adequate ventilation means, to prevent dangerous build up of combustion products.

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3. This appliance must be mounted onto a non-combustible wall or tailored stand, using the rear wall bracket and spacing screws provided.
4. Combustible walls must not protrude past the front of the appliance.
5. This appliance must not be mounted on a combustible surface or metal surface, as radiated heat will cause these surfaces to become extremely hot.
6. Caution should be taken as intense heat is emitted at the bottom front of the appliance.
7. Components having adjustments protected (e.g. paint sealed) by manufacturer are only allowed to be adjusted by an authorised service agent. They are not to be adjusted by the installation person.
8. The unit should be mounted under an extraction hood in compliance with all local regulations.

In the event that the unit is not mounted under an extraction hood, the installer must ensure that all regulations are met and that there is an unobstructed minimum distance of 750mm from the top surface of the unit to the ceiling, which must be of non-combustible material.

NOTE: Do not obstruct or block the appliances flue. Never directly connect a ventilation system to the appliance flue outlet.

Clearances

	Combustible Surface	Non-Combustible Surface
Left / Right hand side	100mm	25mm (*)
Rear	50mm (**)	30mm (**)
Top Clearance to:		
- Extraction Hood		200mm
- Grease Arresting Filter		600mm
- Ceiling (***)		750mm

NOTE: Only non-combustible materials can be used in close proximity to this appliance.

This unit must be installed on a non-combustible wall or tailored stand with the following clearances;

* We recommend allowing a clearance of 100mm on either side of the appliance to allow access to the side panels for servicing purposes.
** Using the wall mounting accessories provided with this appliance.
*** Top clearances can be reduced where local fire protection system is provided, if allowed by the local regulations.

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Wall Mounting (to non-combustible wall only)

1. Fix the wall mounting bracket to the wall with six screws, in such a position that the top of the bracket is level and at least 945mm (38") above any surface beneath the unit. This will ensure that the bottom of the Salamander is at least 600mm (24") above any surface.

2. Fit the two black plastic spacers to the top rear corners of the unit. Leave them unscrewed by approximately 5mm.

3. Fit the two adjusting screws / bolts into the nutserts at the bottom rear corners of the unit. These should protrude approximately 30mm from the rear of the Salamander.

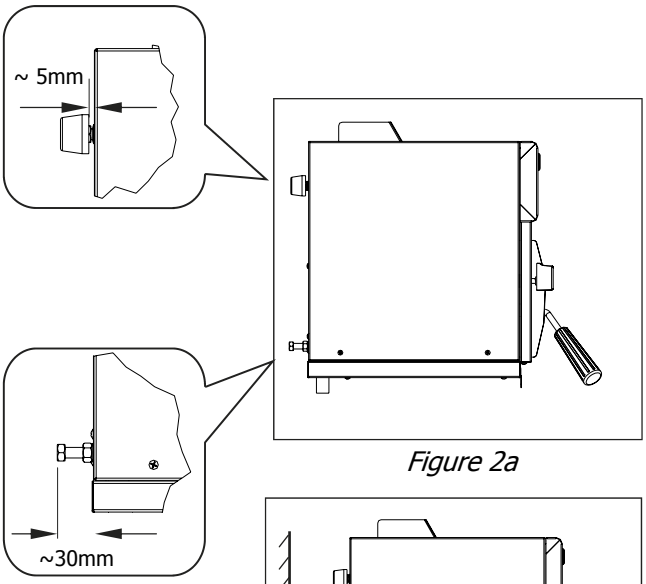

Figure 2a

4. Lift the Salamander onto the wall bracket, lining up the black plastic spacers on the salamander with the mounting notches in the bracket.

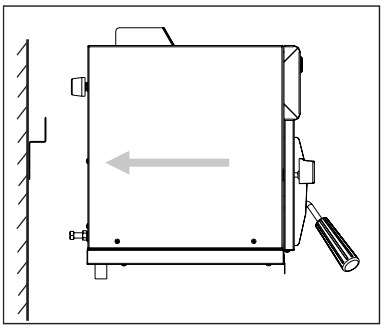
Figure 2b

5. Lower the Salamander onto the mounting bracket.

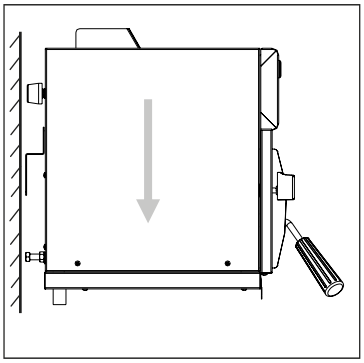
Figure 2c

6. Tighten the black spacers securely and adjust the levelling screws / bolts to ensure that the unit is level.

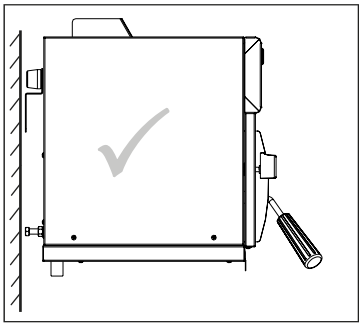
Figure 2d

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Gas Connection

NOTE: ALL GAS FITTING MUST ONLY BE CARRIED OUT BY A QUALIFIED SERVICE PERSON.

1. Cobra Salamanders do not require an electrical connection, as they function totally on the gas supply only.
2. It is essential that the gas supply is correct for the Salamander to be installed and that adequate supply pressure and volume are available. The following checks should be made before installation:-

   a. **Gas Type** the appliance has been supplied for, is shown on a coloured stickers located above the gas connection and next to the rating plate. Check that this is correct for the gas supply the appliance is being installed for. The gas conversion procedure is detailed in this manual.

   b. **Supply Pressure** required for this appliance is shown in the 'Specifications' section of this manual. Check the gas supply to ensure adequate supply pressure exists.

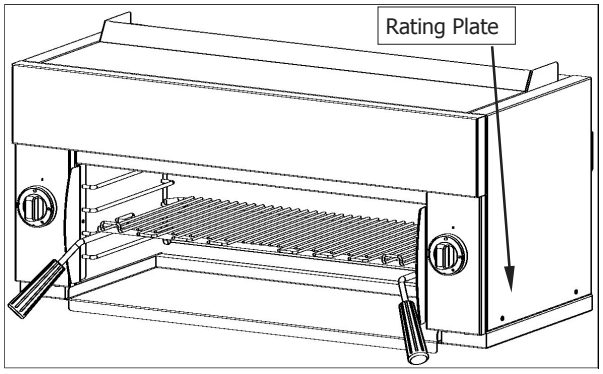

Figure 2e

   c. **Input Rate** of this appliance is stated on the Rating Plate and in the 'Specifications' section of this manual. The input rate should be checked against the available supply line capacity. **Particular note should be taken if the salamander is being added to an existing installation.**

NOTE: It is important that adequately sized piping runs directly to the connection joint on the appliance with as few tees and elbows as possible to give maximum supply volume.

3. Fit the gas regulator supplied, into the gas supply line as close to the appliance as possible.

NOTE:

- **The burner operating pressure is to be measured at the manifold test point with both burners operating at the 'High Flame' setting.**
- **NAT, LPG & Butane Only - The operating pressure is ex-factory set and is not to be adjusted, apart from when converting between gasses, if required.**
- **TOWN GAS Only - The burner operating pressure is to be adjusted using the adjustable gas regulator supplied.**
- **Refer to the 'Gas Conversion and Specifications' section of this manual for further details.**

The regulator connections are $^1/_2$" BSP female.

The connection to the appliance is $^1/_2$" BSP male.

NOTE: A Manual Isolation Valve must be fitted to the individual appliance supply line.

4. Ensure the regulator has the correct colour spring fitted for the gas type, as detailed in the 'Specifications' table. Opposite gas type replacement spring is part of the gas conversion kit supplied.
5. Correctly locate the appliance into its final operating position and using a spirit level, adjust the legs so that the unit is level and at the correct height.
6. Connect gas supply to the appliance. A suitable jointing compound which resists the breakdown action of LPG must be used on every gas line connection, unless compression fittings are used.

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7. Check all gas connections for leakages using soapy water or other gas detecting equipment.

WARNING:

DO NOT USE A NAKED FLAME TO CHECK FOR GAS LEAKAGES.

8. Check that the gas operating pressure is as shown in 'Specifications' section.

NOTE: The operating pressure to be measured at the manifold test point and with both burners operating at the 'High Flame' setting.

9. Turn off the mains gas supply and bleed the gas out of the appliance gas lines.
10. Turn 'On' the gas supply and the appliance.
11. Verify the operating pressure remains correct (Re-adjust the regulator if required).

Commissioning

1. Before leaving the new installation;
   a. Check the following functions in accordance with the operating instructions specified in the 'Operation' section of the User manual.
      - Light the Main Burners.
      - Check the Low Fire burner operation.
      - Check the High Fire burner operation.
      - Check the Racking System operation.

   b. Ensure that the operator has been instructed in the areas of correct lighting, operation, and shutdown procedure for the appliance.

2. The User manual must be kept by the owner for future reference, and a record of ***Date of Purchase, Date of Installation*** and ***Serial Number of Unit*** recorded and kept with the manual. **(These details can be found on the Rating Plate attached to the R/H side panel (refer to the 'Gas Connection' section).**

NOTE: If for some reason it is not possible to get the unit to operate correctly, shut off the gas supply and contact the supplier of this unit.

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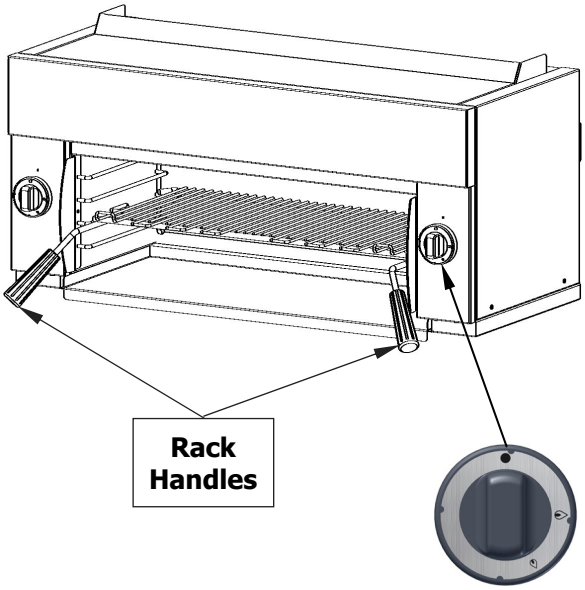
3 Operation

NOTE: A full user's Operation Manual is supplied with the product and can be used for further referencing of installation, operation and service.

3.1 Description of Controls

1. Cobra salamanders provide two independently controlled heat zones.
2. High speed grilling is provided by the two infrared gas burners in the ceiling of the grilling compartment.
3. The left hand gas control knob and right hand gas control knob operate the left side and right side burners respectively, independently of each other.
4. Each burner is provided with a manually lit pilot burner and flame failure protection.



Gas Control Knobs

O OFF Position.

HIGH Flame.

LOW Flame.

3.2 Operation

Lighting the Main Burners

WARNING:

ALWAYS SET THE GAS CONTROL TO THE 'HIGH' POSITION WHEN LIGHTING THE MAIN BURNER.
IF THE MAIN BURNER GOES OUT DURING NORMAL OPERATION OR FOR ANY REASON, WAIT 3 MINUTES BEFORE ATTEMPTING TO RE-LIGHT THE MAIN BURNER

1. Rotate the control knob anti-clockwise to the position marked HIGH.
2. Manually light the main burner.
   - hold the gas control knob depressed for approx. 10 - 15 secs then release.
3. Once lit, the main burner will be burning at full rate. For a lower heat, push in the gas control knob and turn fully anti-clockwise to the LOW position.
4. Also for intermediate heat, position the control knob between the HIGH and LOW positions.
5. Repeat Items **1 to 4** to light the second main burner.

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3.3 Racking

Racking System

The Rack System fitted to the Cobra Salamander is self-supporting when withdrawn, to allow easy loading of food. The installation of the rack is dependant on the cooking function required.

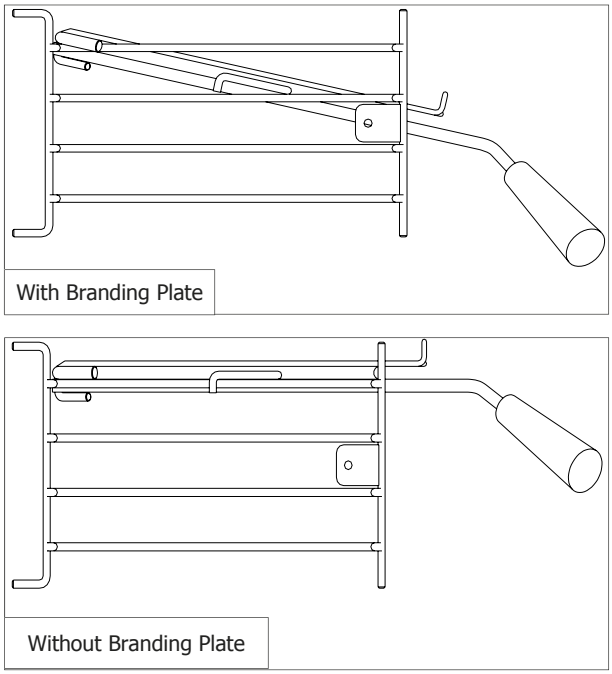

Figure 3.3a

3.4 Explanation of the Control System

Safety System

The purpose of the safety system is to shut off the flow of gas if the main flame goes out. It comprises the flame itself, the thermocouple, and the flame failure gas valve.

The main flame is lit by rotating the gas control knob anti-clockwise and holding in, which in turn temporarily pushes the plunger inside the safety valve open and allows gas to flow through. The main burner is then lit manually. Once the burner is lit, the thermocouple will begin to generate millivolts (after about 10 to 30 seconds of being heated) and will energize the electromagnet inside the gas valve. Once energized the electromagnet holds the plunger inside the gas valve in the open position. The plunger has to be pushed all the way in for the electromagnet to be able to hold it in place. If the main burner flame goes out for some reason, the thermocouple will cool after about 10 to 30 seconds and stop generating millivolts. The electromagnet will then de-energize, and the plunger will snap shut, cutting off the flow of gas to the main burner.

Detail of each component in the safety system is explained below.

Thermocouple

The thermocouple is a device that generates electricity when heat is applied to the tip.

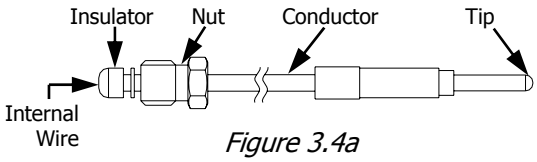

Figure 3.4a

The tip of the thermocouple is located in the main burner flame, and the nut at the other end of the thermocouple screws into the back of the gas valve. Inside the copper tubing is a wire which is joined at the tip but insulated from the rest of the tubing. These two parts (the copper tubing and wire) make up the 'wiring' for an electrical circuit. When these two dissimilar metals, wire and tip, are heated an electrical voltage is produced. This type of thermocouple generates between 7 and 30 millivolts when heated in the main flame.

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Electromagnetic Flame Failure Gas Valve

The purpose of the safety valve is to shut off the flow of gas if the main flame goes out.

Inside the body of the gas valve is an electro-magnet connected to a spring loaded plunger. When the electromagnet is energized, it holds the plunger in, allowing gas to flow through the valve. When the electromagnet is de-energized, the plunger snaps to the closed position, stopping the flow of gas to the main burner.

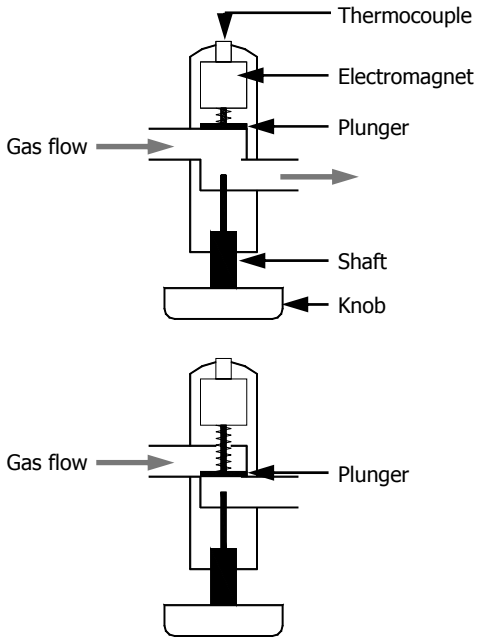

Figure 3.4b

Millivolts are provided to the electromagnet by the thermocouple (not shown) which generates millivolts when heated. The thermocouple screws into a fitting at the back of the gas valve to make an electric connection. By pressing in the gas control knob, the plunger can be temporarily held open while lighting. There's two reasons for this; gas has to flow through the safety valve to make it possible to light the main burner, and secondly the plunger has to be pushed all the way in for the electromagnet to hold it in. i.e. the electro-magnet is strong enough to hold the plunger in once there, but is not strong enough to pull it in by itself.

Sometimes a problem with the flame not staying lit after releasing the button, can be attributed to the plunger not being pushed all the way in.

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CAUTION:

Always turn off the gas supply before cleaning.

This unit is not water proof.

Do not use water jet spray to clean interior or exterior of this unit.

4.1 Cleaning

General

To achieve the best results cleaning must be regular and thorough. All controls and mechanical parts should be checked and adjusted periodically by a qualified service person. If any small faults occur, have them attended to promptly.
Don't wait until they cause a complete breakdown.
It is recommended that the appliance is serviced every 6 months.
Clean the salamander regularly. A clean appliance looks better, will last longer and will perform better.

Racking

For ease of cleaning of this unit and the racking system and to achieve the best results, it is recommended that the racking is removed completely from the unit and cleaned independently. This will allow for a more thorough cleaning of the Salamander.

To remove the racking system, carry out the following instructions.

- Remove the Crumb / Drip Tray from the underside of the salamander unit.
- Remove the Branding Plate from the rack (if fitted).
- Slide the rack out of the side racks and remove from the unit.
- Remove the left and right hand side racks from the unit by removing the single securing screw from each of the side racks.
- Withdraw the left and right hand side racks from the unit.
- Refit the racking in the reverse order once cleaning has been completed.

Stainless Surfaces

Clean with detergent. Baked on deposits or discolouration may require a good quality stainless steel cleaner or stainless steel wool. Always apply the cleaner when the Salamander is cool and rub in the direction of the 'Grain'.

Enamelled Surfaces

Do not use wire brushes, steel wool or other abrasive material. Clean the surfaces regularly with a good quality domestic oven cleaner. Remove the rack and side racks from the salamander, this allows easy cleaning of the flat side walls. Leave the tray in to collect all residue.

Crumb / Drip Tray

- Empty and clean daily.

Periodic Maintenance

NOTE: All maintenance operations should only be carried out by a qualified service person.

To achieve the best results cleaning must be regular and thorough and all controls and mechanical parts should be checked and adjusted periodically by a qualified service person. If any small faults occur, have them attended to promptly. Don't wait until they cause a complete breakdown.
It is recommended that the appliance is serviced every 6 months.

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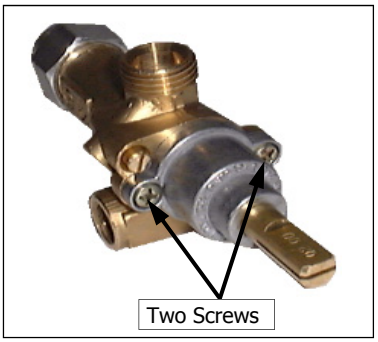
Gas Control Valve Re-Greasing

The gas control valve should be dismantled and greased every 6 months to ensure the correct operation of the gas control valve.

To carry out this operation;-

- Remove the gas control knobs from the gas tap spindles by pulling the knobs away from the control panel.
- Remove the crumb / drip tray from the appliance.
- Remove the two screws on the underside of the control panel, securing the control panel to the hob.
- Remove the control panel from the front of the appliance.
- Remove the 2 screws holding shaft plate to gas control body of the valve and remove control shaft and plate. Note orientation of shaft for correct re-assembly.
- Using needle nose pliers or similar, pull out gas control spindle, again noting its orientation.
- Apply a suitable high temperature gas cock grease or lubricant such as ROCOL - A.S.P (Anti scuffing paste) / Dry Moly Paste to the outside of spindle.
- Replace spindle and re-assemble the gas control in reverse order.
- Refit the control panel to the appliance and secure with 2 screws.
- Refit the knobs to the gas control valve spindles.



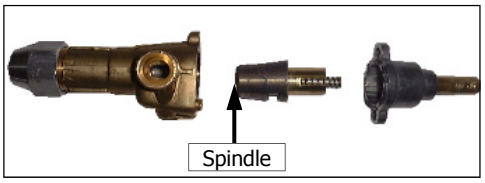


Figure 4.1a

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COBRA GAS SALAMANDER - MAINTENANCE SCHEDULE

Business Name and Address:	
Date:	Service Report No:
Phone:	Fax:
	Serial No:
Clients Order No:	Serviceman:

Model:		✓	Remarks
1	Inspect exterior condition of the unit.		
2	Check working gas pressure is correct to figures shown on rating plate.		Pressure_____ kPa.
3	Inspect burner ceramic plaques for signs of cracking.		
4a	Inspect thermocouples.		
4b	Replace thermocouples (every 12 months).		
5	Check injectors are clean and free from blockages.		
6	Re-grease gas cocks.		
7	Check for tightness of gas connections.		
8	Check for gas leaks.		
9	Check the piezo ignition functions correctly.		

Service Comments:

Additional work / repairs required:

Customers approval:
Name (print): Title:
Customers signature: Date:

Suggestion: Photocopy this form and keep on file for continued use.

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5 Fault Finding

5.1 Fault Finding Chart

CAUTION:

All installation and service repair work must be carried out by qualified persons only.

Fault	Possible Cause	Remedy
Main burners will not light.	Wrong size or blocked injectors.	Replace / clean the main injectors. **(Refer service section 6.2.3)**
	Incorrect gas supply pressure.	Check gas supply pressure is correct.
	Faulty gas control valve.	Replace the gas control valve. **(Refer Service Section 6.2.4)**
Burner goes 'Out' when set to 'Lo'.	Low Fire rate set too low.	Adjust Low Fire rate.
	Faulty Thermocouple.	Replace.
	Faulty magnet in Gas Valve.	Replace.
	Draft at installation is blowing out burner.	Minimise drafts or re-locate appliance to more suitable location.
Burner goes 'Out' when Gas Control released.	Not holding gas knob 'In' for long enough.	Hold gas knob 'In' for at least 10 seconds.
	Low gas pressure.	Check / adjust.
	Faulty Thermocouple.	Replace.
	Faulty magnet in Gas Valve.	Replace.
Burner flame incorrect colour / flame not stable	Incorrect supply pressure.	Check gas supply pressure is correct.
	Incorrect main burner injector sizes.	Check main burner injector sizes and replace if necessary. **(Refer service section 6.2.3)**
	Main burner injector blocked.	Clean main burner injector. **(Refer service section 6.2.3)**
Burner popping / blow back	Gas leak in main burner plaque. **(Refer Fault Diagnosis 5.2.2)**	Replace main burner. **(Refer Service Section 6.2.2)**
Lack of glowing. Large haze beneath burner	Incorrect gas supply pressure.	Check the gas pressure at the pressure test point.

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5.2 Fault Diagnosis

5.2.1 Burner Drops Out When Gas Knob Released

Thermocouple Faulty

Check thermocouple connection to gas control is firm (loose connections will cause resistance in millivolt circuit and result in pilot outage).

If connection is OK, then disconnect the thermocouple from the rear of the gas control, light the burner, and whilst holding the control knob in, and measure voltage between the thermocouple and earth (e.g. the body of the gas control). This should read approximately 30mV. If this reading is less than 10mV then the thermocouple is faulty—replace.

Gas Valve Electromagnet Faulty

If thermocouple milli-voltage is above 10mV, and the burner still will not hold, then the gas electro-magnet is faulty - replace.

5.2.2 Burner Popping / Blow Back

Gas Leak in Main Burner Plaque

With the burner operating, check for hairline cracks on the burner tiles (these will appear as brighter orange lines on the burner tiles). If visible, replace the main burner.

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6 Service Procedures

WARNING:

- **ENSURE THAT THE GAS SUPPLY IS SWITCHED 'OFF' BEFORE COMMENCING SERVICING.**
- **ALWAYS CHECK / TEST FOR GAS LEAKS ON COMPLETION OF SERVICING REPAIRS ON THE GAS SYSTEM.**

CAUTION:

All installation and service repair work must be carried out by qualified persons only.

Section **Page Number**

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6.2.2 Main Burner 18
6.2.3 Main Burner Injectors 18
6.2.4 Gas Control Valve 18
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6.3.2 Low Fire Screw Adjustment 20

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6.1 Access

6.1.1 Control Panel

1) Remove control knob.
2) Undo the two screws at the bottom of the control panel, and remove.

Figure 6.1.1

6.1.2 Side Panel

1) Unscrew and remove the two screws near the bottom of the side panel to be removed.
2) Lift the side panel and remove from the salamander.

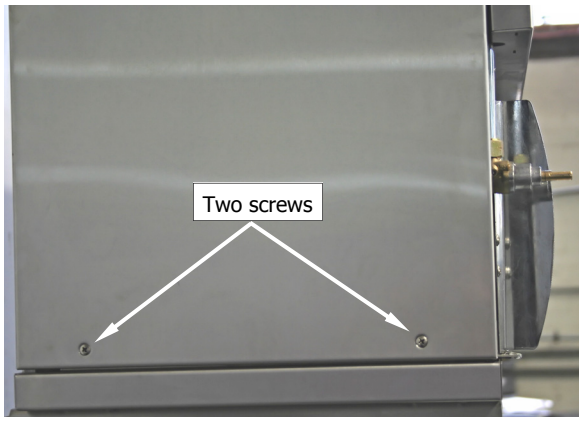

Figure 6.1.2

6.2 Replacement

6.2.1 Thermocouple

1) Remove the side panel (Refer Item 6.1.2).
2) Unscrew the thermocouple from the side panel of the salamander and withdraw the thermo-couple from the burner area.

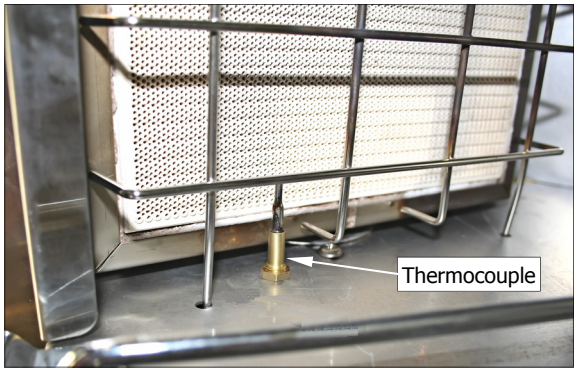

Figure 6.2.1a

3) Unscrew the thermocouple from the rear of the gas valve and remove the thermocouple from the salamander.

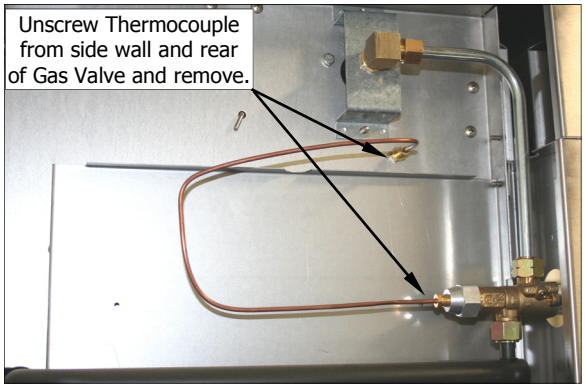

Figure 6.2.1b

4) Replace and re-assemble the thermocouple in reverse order.

IMPORTANT:

WHEN SCREWING THERMOCOUPLE BACK INTO THE GAS CONTROL, ONCE THREADED UP, TIGHTEN UP ANOTHER ¼ TURN ONLY.
DO NOT OVER TIGHTEN.

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6.2.2 Main Burner

1) Remove the side panel (Refer Item 6.1.2).
2) Remove the burner guard by pulling it down from the centre fastenings and then removing it from the mounting holes in the side wall.
3) Remove the two centre fixing screws and remove the centre bracket.

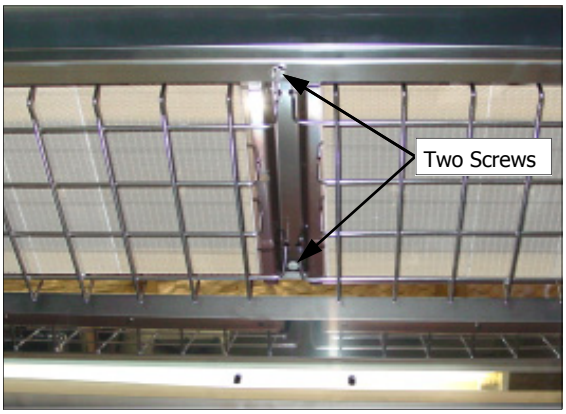

Figure 6.2.2a

4) Whilst holding the burner, remove the two screws located in the control area which fix to the burner flange. The burner can now be removed.

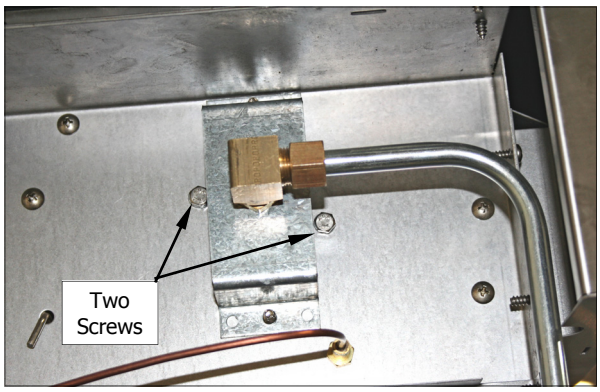

Figure 6.2.2b

5) Replace the burner and re-assemble in reverse order.

6.2.3 Main Burner Injectors

1) Remove the side panel (Refer Item 6.1.2).
2) Unscrew and remove the main burner injector.

Figure 6.2.3

3) Clean or replace injector and re-assemble in reverse order.

NOTE: It is important that the injector aligns centrally with the burner venturi.

6.2.4 Gas Control Valve

1) Remove the side panel (Refer Item 6.1.2), and remove the knob from the gas control valve.
2) Disconnect the thermocouple and main burner supply from the gas control valve.
3) Undo the nut securing the gas control inlet to the supply manifold.
4) Extract the gas control valve, replace and re-assemble in reverse order.

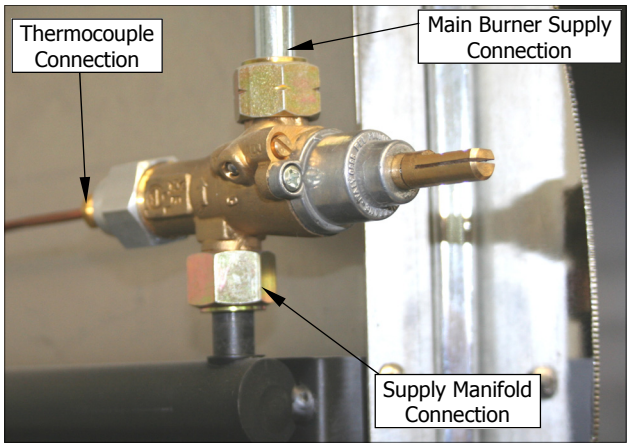

Figure 6.2.4

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6.2.5 Gas Control Valve Electro-Magnet

1) Remove side panel (Refer Item 6.1.1).
2) Unscrew the thermocouple from the rear of the gas control valve.
3) Remove the rear nut from the gas control valve.
6) Extract the gas control valve electro-magnet.
7) Replace and re-assemble in reverse order.

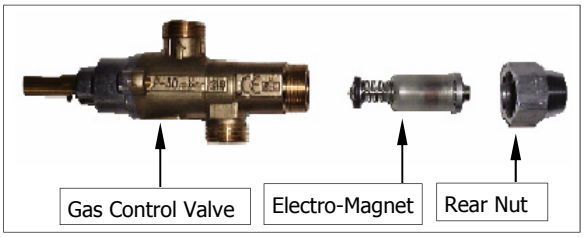

Figure 6.2.5

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6.3 Adjustment / Calibration

6.3.1 Gas Control Valve Re-Greasing

1) Turn 'Off' the gas supply at the isolation valve.
2) Remove the control panels, (Refer Item 6.1.1).
3) Remove the 2 screws holding shaft plate to gas control body and remove control shaft and plate. (Refer Figure 6.3.1a). Note orientation of shaft for correct re-assembly.

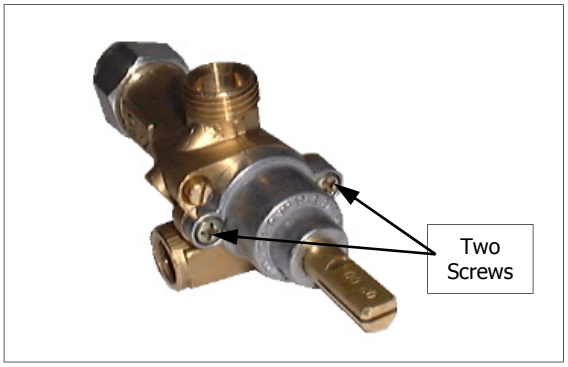

Figure 6.3.1a

4) Using needle nose pliers or similar, pull out gas control spindle, again noting its orientation.
5) Apply a suitable high temperature gas cock grease or lubricant such as ROCOL - A.S.P (Anti scuffing paste) to the outside of the spindle.

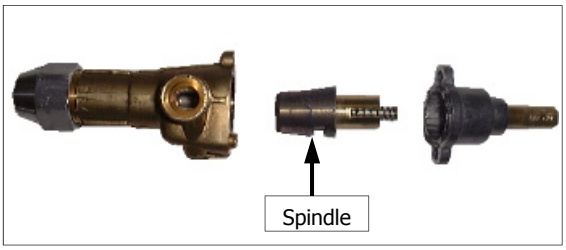

Figure 6.3.1b

6) Replace spindle and re-assemble the gas control valve in reverse order.
7) Refit the control panel to the appliance and secure with 2 screws.
8) Refit the control knobs to the gas control valve spindles.

6.3.2 Low Fire Screw Adjustment

1) Light the burner and turn the control to the low flame position.
2) Pull off the gas control knob.
3) Adjust low fire screw (located at the top left of the gas valve) to achieve an even, low burn across the burner.

   The recommended factory settings are:

   LPG ¼ turn out.
   Nat 1 turn out.

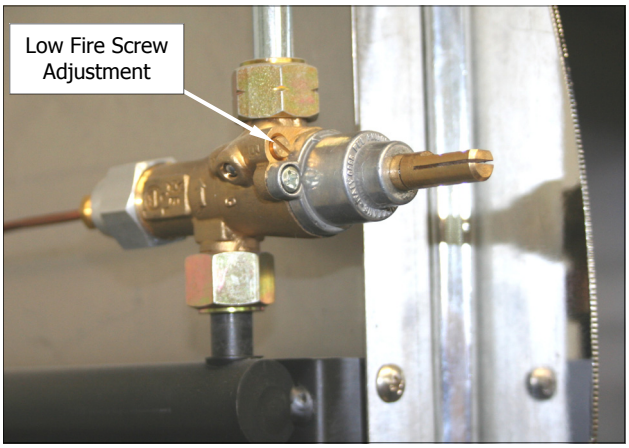

Figure 6.3.2

4) Paint-seal the low fire screw, and refit the control knobs to the gas control valves.

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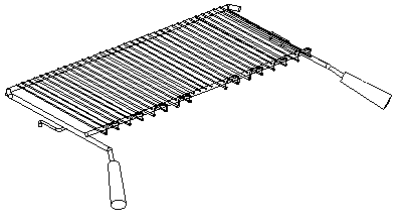
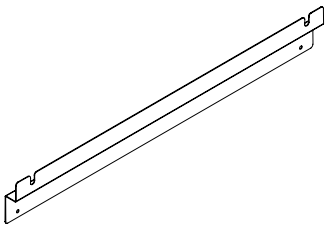
CS9 Cobra Salamander Accessories

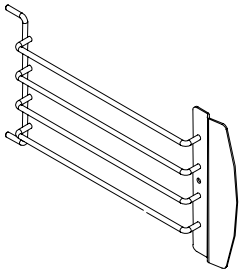
Salamander Rack (017963)
Rack Handle (013395)



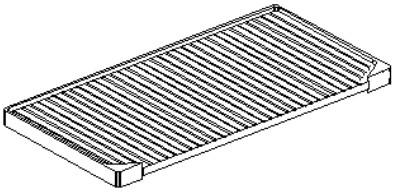
Wall Mounting Bracket (026096)



Side Rack (026093)



Branding Plate (013418)



CS9 Cobra Salamander Gas Conversion Kits Index

AU, UK and Export Models Only

MODEL TYPE	CONVERT TO	CONVERSION KIT
CS9 SALAMANDER	LPG (Propane)	231552
	Nat Gas	231551
	Butane	232081
	Town Gas	232082

NOTE:

Gas Regulators:

Town Gas Kits include special Town Gas Regulator which is required to be installed as per the instructions supplied.

LPG, NAT & BUTANE kits do not include regulator, as it is an universal regulator convertible between the LPG / Butane and Natural gases, originally supplied with the appliance.

If required it can be ordered separately as:-

228533 - ½" Convertible Regulator.

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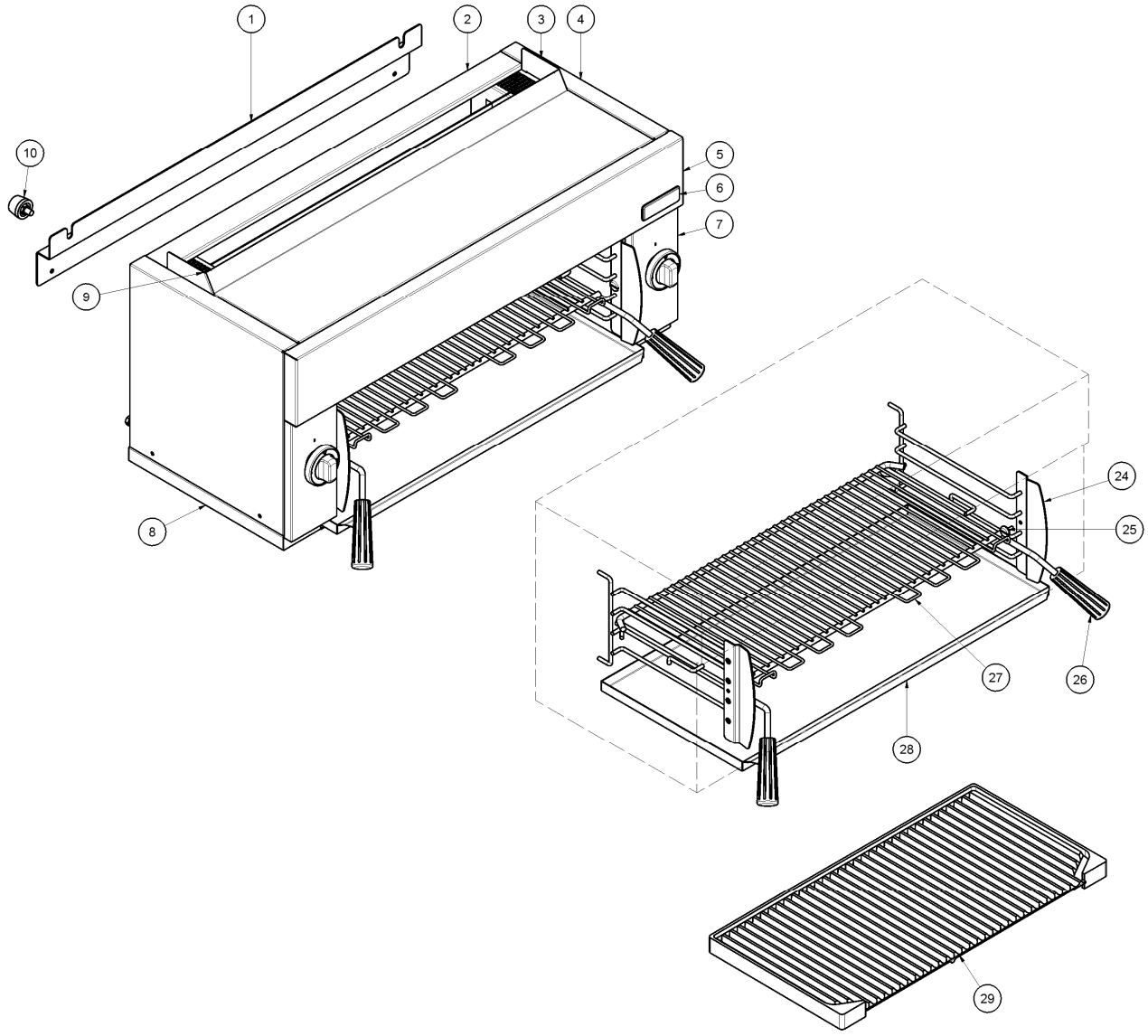
8.1 CS9 Cobra Salamander - Main Assembly



ITEM	PART NO	DESCRIPTION
1	026096	WALL MOUNTING BRACKET
2	026086	BACK PANEL
3	026090	FLUE END RH
4	026094	SIDE PANEL
5	230625	FRONT COVER
6	230587	COBRA BADGE WA
7	227490	CONTROL PANEL
8	026091	TRAY SUPPORT
9	026089	FLUE END LH
10	013908	SPACER ASSEMBLY
24	026093	SIDE RACK WA - SALAMANDER
25	227961	SIDE RACK SCREW
26	013395	RACK HANDLE
27	017963	RACK
28	231546	DRIP TRAY
29	013418	BRANDING PLATE (OPTIONAL EXTRA)
	231551	GAS CONVERSION KIT CS9 NAT
	231552	GAS CONVERSION KIT CS9 LPG / PROPANE
	232081	GAS CONVERSION KIT BUTANE
	232082	GAS CONVERSION KIT TOWNS GAS

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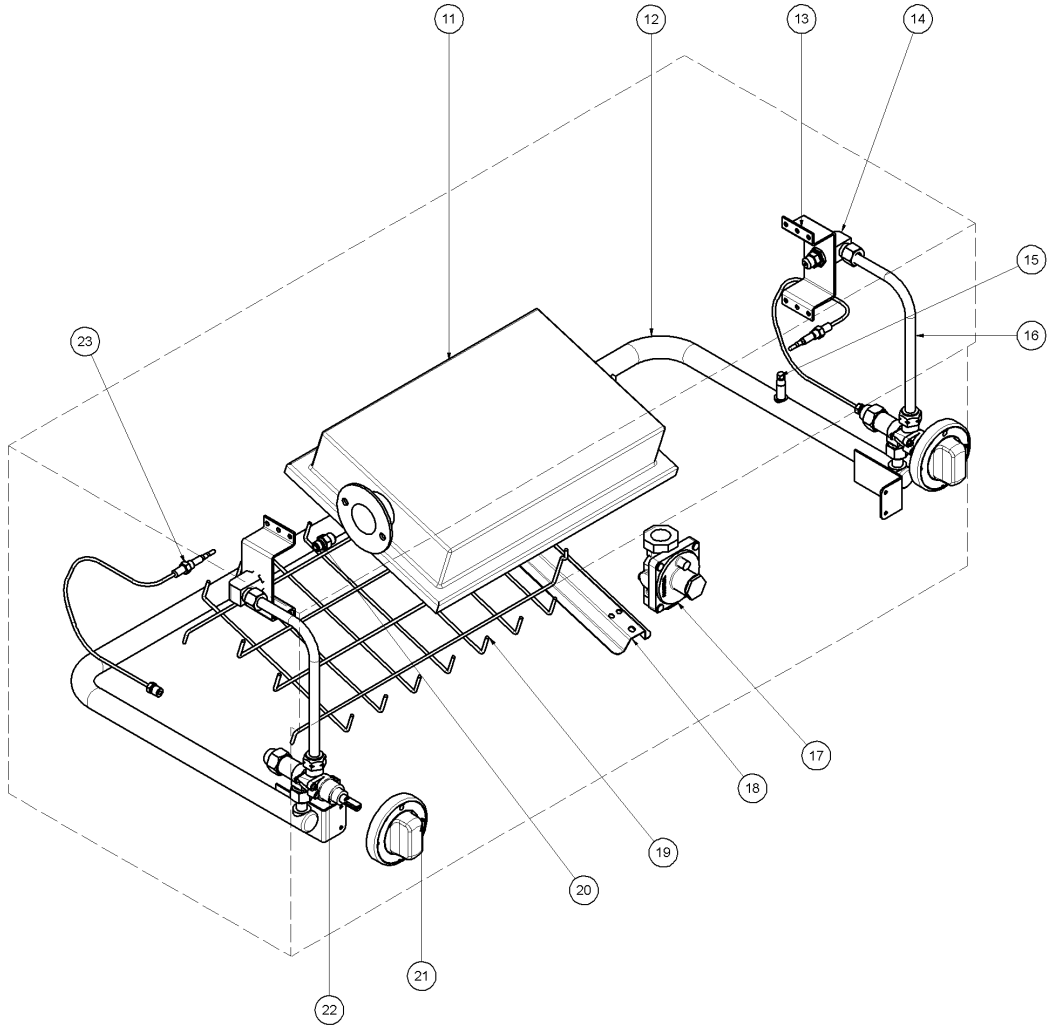
8.2 CS9 Cobra Salamander - Gas Assembly



ITEM	PART NO	DESCRIPTION
11	019214K	INFRA-RED BURNER KIT
12	230626	MANIFOLD
13	228354	INJECTOR SUPPORT
14	229511	INJECTOR ELBOW X 3-8
15	026060	PRESSURE TEST POINT SCREW
16	227492	INJECTOR SUPPLY TUBE
17	228533	REGULATOR 1/2" CONVERTABLE
18	026077	BURNER RETAINING CHANNEL
19	026123	BURNER GUARD
20	032115	INJECTOR 1.15 mm (LPG/PROPANE)
	032185	INJECTOR 1.85mm (NAT GAS)
	032350	INJECTOR 3.50mm (TOWNS)
	032110	INJECTOR 1.10mm (BUTANE)
21	230695	KNOB SALAMANDER
22	019430	GAS CONTROL PINTOSSI 20S-B
	019574	BYPASS SCREW 1.0mm
	018790	GAS MAGNET (PART OF ITEM 22)
23	230671	THERMOCOUPLE 500MM (c/w M8 NUT)
	024573	M8 NUT (PART OF ITEM 23)

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9 Service Contacts

Australia

VICTORIA - MOFFAT PTY
HEAD OFFICE AND MAIN WAREHOUSE
740 Springvale Road
Mulgrave VIC 3170
Spare Parts Department

Tel (03) 9518 3888
Fax (03) 9518 3838
Free Call 1800 337 963
Fax (03) 9518 3895

NEW SOUTH WALES - MOFFAT PTY
Unit 3/142 James Ruse Drive
Rosehill NSW 2142
Spare Parts

Tel (02) 8833 4111

Free Call 1800 337 963
Fax (03) 9518 3895

QUEENSLAND - MOFFAT PTY
30 Prosperity Place
Geebung QLD 4034
Spare Parts

Tel (07) 3630 8600

Free Call 1800 337 963
Fax (03) 9518 3895

WESTERN AUSTRALIA - MOFFAT PTY
67 Howe St
Osbourne Park, WA 6017
Spare Parts

Tel (08) 9202 6820
Fax (08) 9202 6836
Free Call 1800 337 963
Fax (03) 9518 3895

NATIONAL COVERAGE FOR 24 HOUR SERVICE OR MAINTENANCE DIAL

FREE CALL 1800 622 216 (AUSTRALIA ONLY)

Canada

SERVE CANADA
22 Ashwarren Rd
Downview
Ontario M3J1Z5

Tel 416-631-0601
Fax 416-631-0315

New Zealand

CHRISTCHURCH - MOFFAT LTD
16 Osborne St
PO Box 10-001
Christchurch
Spare Parts

Tel (03) 389 1007
Fax (03) 389 1276

Free Call 0800 MOFFAT
(0800 66 33 28)
Fax (03) 381 3616

AUCKLAND - MOFFAT LTD
4 Waipuna Road
Mt Wellington
Auckland
Spare Parts

Tel (09) 574 3150
Fax (09) 574 3159

Free Call 0800 MOFFAT
(0800 66 33 28)

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United Kingdom

BLUE SEAL LTD
Units 67
Gravely Industrial Park
Gravely Park, Erdington
Birmingham B24 8TQ
England

Tel 0121 327 5575
Fax 0121 327 9711

United States of America

MOFFAT INC.
3765 Champion Blvd
Winston-Salem
NC27115

Tel 1800 551 8795
Fax 336 661 9546

NATIONAL COVERAGE FOR SERVICE OR MAINTENANCE DIAL

FREE CALL 1800 551 8795 (USA ONLY)

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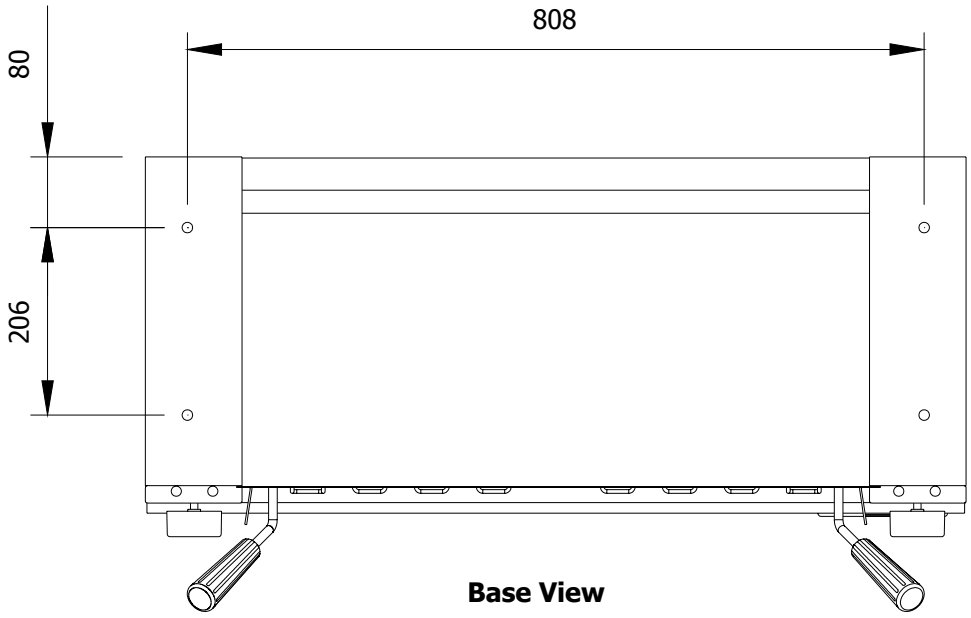
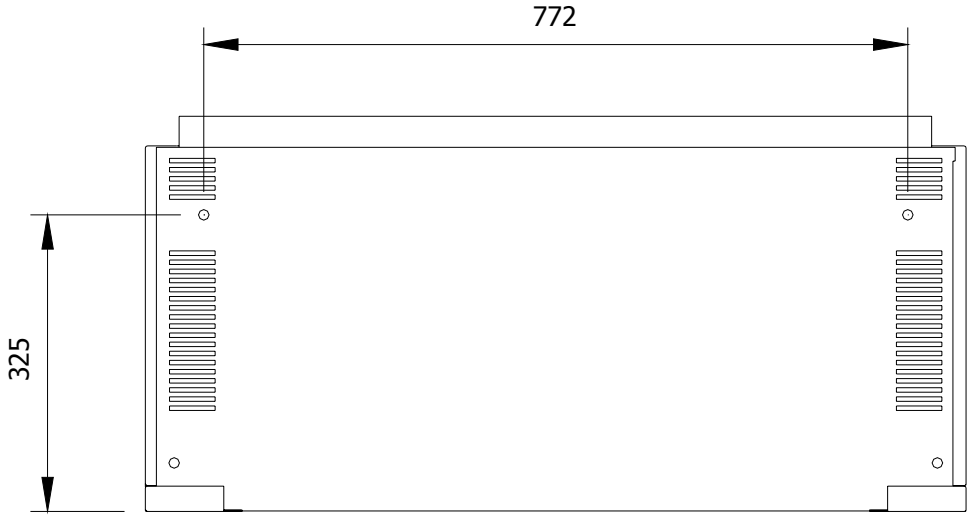
Mounting Hole Locations



Base View



Rear View

All dimensions are shown in millimetres.

All mounting holes are threaded $^{3}/_{8}$" BSW.

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Conversion Procedure

CAUTION:

Ensure that the Unit is isolated from the gas supply before commencing servicing

NOTE:

- **These conversions should only be carried out by qualified persons. All connections must be checked for leaks before re-commissioning the appliance.**
- **For all the following conversion instructions, the side panels have to be removed (Remove the two screws at the bottom of each side panel).**
- **All conversion details apply to both L/Hand and R/Hand burners.**
- **For all relevant gas specifications refer to the table at the end of this section.**

Main Burner Injectors

1. Ensure that the gas supply has been turned 'Off'.
2. Unscrew the main burner injectors ($^1/_2$" A/F).
3. Determine the correct injector sizes for the corresponding gas type from the rating plate affixed to the right hand side panel front bottom corner.
4. Replace with the correct size injectors.

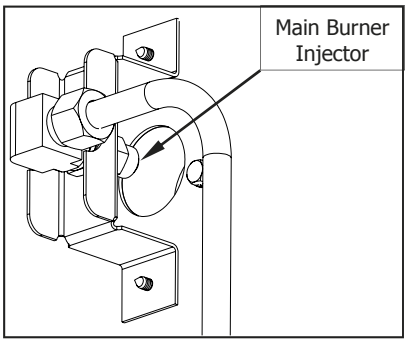

Figure b1

Low Fire Adjustment

1. Remove the gas control knobs from the front of the unit.
2. Remove the 2 front control panels by removing the two screws (per panel) located at the bottom of each panel.
3. Set the burner low fire adjustment. The low fire screw on the gas control valve should be screwed fully in, then unscrewed by the measurement shown in the 'Gas Specifications' table.

NOTE: The 'Low Fire Screw' should be sealed with coloured paint on completion of the low fire adjustment.

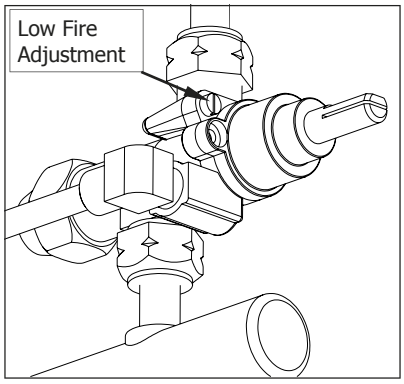

Figure b2

Gas Type Identification Label

On completion of the gas conversion, replace the gas type labels located at:-

- The rear of the unit, above the gas connection.
- Beside the rating plate.

NOTE: If for some reason it is not possible to get the appliance to operate correctly, shut off the gas supply and contact the supplier of this appliance.

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Gas Regulator

- NAT Gas / LPG / Butane Only.

NOTE: The regulator supplied is convertible between Natural Gas and LP Gas, but it's outlet pressure is fixed ex-factory and is NOT to be adjusted.

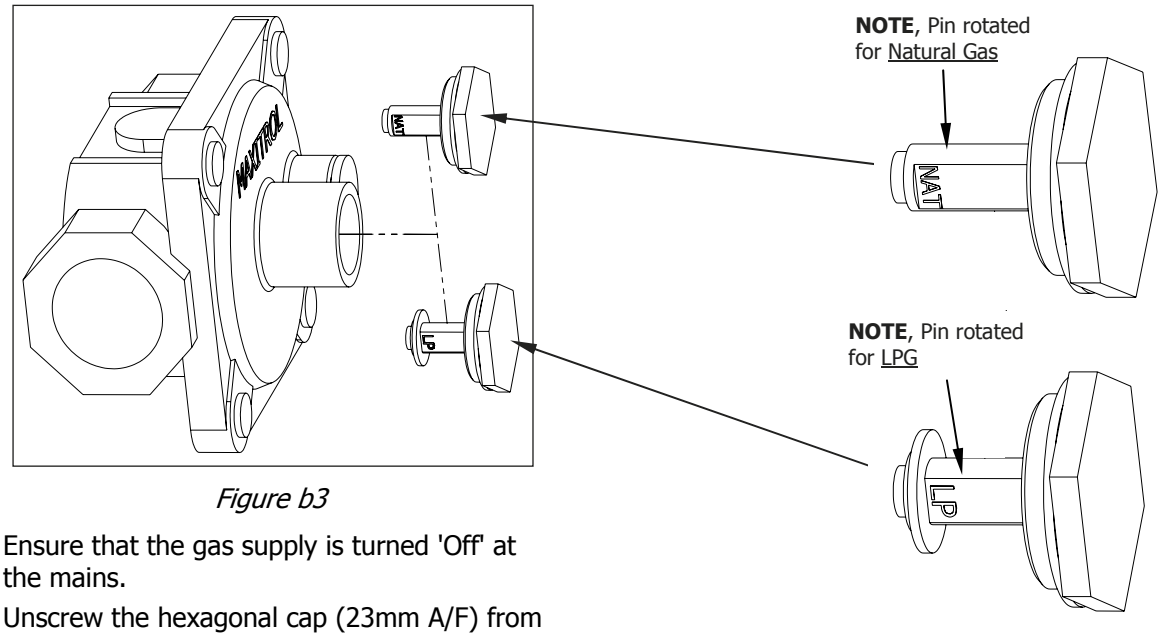

Figure b3

1. Ensure that the gas supply is turned 'Off' at the mains.
2. Unscrew the hexagonal cap (23mm A/F) from the regulator.
3. Un-clip the plastic pin from the cap, reverse the pin and re-fit it back to the cap the correct way for the gas type to be used. **(Either 'LP' or 'NAT' should be visible on the flank of the pin once re-fitted to the cap)**.
4. Screw the cap back into the regulator hand tight only.

- Town Gas Only.

1. Unscrew and remove the slotted cap from the regulator.
2. Turn on the gas supply and the appliance.
3. Adjust the pressure djusting nut to achieve the correct burner operating pressure.

NOTE: The operating pressure to be measured at the manifold test point and with both burners operating at the 'High Flame' setting.

4. Turn off the mains gas supply and bleed the gas out of the appliance gas lines.
5. Turn on the gas supply and the appliance.
6. Verify the operating pressure remains correct (Re-adjust the regulator if required).
7. Screw the cap nut back onto the regulator.

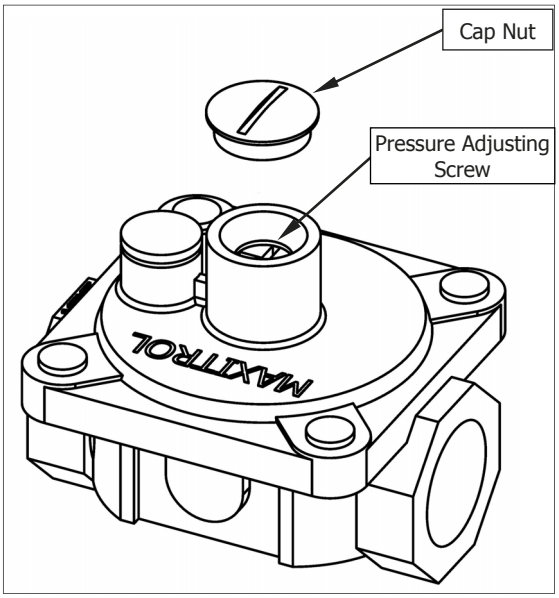

Figure b4

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Commissioning

Before leaving the converted installation;

1. Check all gas connections for leakages using soapy water or other gas detecting equipment.

WARNING:

DO NOT USE A NAKED FLAME TO CHECK FOR GAS LEAKAGES.

2. Check the following functions in accordance with the operating instructions specified in the 'Operation' section of the User manual.
   - Light the Main Burners.
   - Check the Low Fire burner operation.
   - Check the High Fire burner operation.
   - Ensure all controls operate correctly.

NOTE: If for some reason it is not possible to get the unit to operate correctly, shut off the gas supply and contact the supplier of this unit.

Gas Specifications

- Non UK Only:

		Natural Gas	LP Gas (Propane)	Butane	Town Gas
Main Burner Injectors		Ø 1.85mm	Ø 1.15mm	Ø 1.10mm	Ø 3.50mm
Low Fire	**Size**	Ø 1.00mm	Ø 1.00mm		Ø 1.00mm
	Adjustment	2 turns out (c.c.w.)	½ turn out (c.c.w.)		4 turns out (ccw)
Supply Pressure		1.13 - 3.40 kPa	2.75 - 4.50 kPa		0.76 - 1.50 kPa
Operating Pressure		1.0 kPa	2.55 kPa		0.63 kPa
Gas Regulator Cap Screw					Adjustable Regulator (Adjust to the Burner Operating Pressure)

- UK Only:

		Natural Gas (G20)	Propane (G31)
Main Burner Injectors		Ø 1.85mm	Ø 1.15mm
Low Fire:	**Size**	Ø 1.00mm	Ø 1.00mm
	Adjustment	2 turns out (ccw)	½ turn out (ccw)
Operating Pressure		10 mbar	26 mbar
Gas Regulator Cap Screw			

NOTE:

- **The burner operating pressure is to be measured at the manifold test point with both burners operating at the 'High Flame' setting.**
- **NAT, LPG & Butane Only - The operating pressure is ex-factory set and is not to be adjusted, apart from when converting between gases, if required.**
- **TOWN GAS Only - The burner operating pressure is to be adjusted using the adjustable gas regulator supplied.**
- **Refer to the 'Gas Conversion and Specifications section of this manual for further details.**

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Equipment Design Changes

Date	Change Info.	Equip. Ser. No.	Description of Change

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